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10/823,601	04/14/2004	Shikio Yoshida	2936-0217PUS1	6227

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EXAMINER	
NGUYEN, LEON VIET Q	
ART UNIT	**PAPER NUMBER**
2611	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)
	10/823,601	YOSHIDA ET AL.
	Examiner	Art Unit
	Leon-Viet Q. Nguyen	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11 and 14-19* is/are rejected.

7)☐ Claim(s) *9,10,12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/14/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/14/2004 was filed after the mailing date of 4/14/2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. Claims 4-8, 11, and 14 are objected to because of the following informalities:

a. In claims 4, 6, 8, 11, and 14, "a plurality of antennas via which are received data signals each transmitted in one of a plurality of carrier frequency bands" appears to be a literal translation into English from a foreign document and is replete with grammatical and idiomatic errors

b. In claims 5 and 7, "the modulation circuit" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3 is rejected under 35 U.S.C. 102(e) as being anticipated by Bjerke et al (US20050157811).

Re claim 1, Bjerke discloses a wireless communication apparatus (fig. 1) comprising:

a modulation circuit (modulator 116 in fig. 1) that generates a plurality of data signals (the outputs of modulator 116 going to transmitters 122a-122t in fig. 1) containing identical data (the data from TX Data processor 114 in fig. 1) each in one of a plurality of carrier frequency bands (¶0026, each transmission channel corresponding to a frequency subchannel of a spatial subchannel); and

a plurality of antennas (antennas 124a-124t in fig. 1) via which the plurality of data signals outputted from the modulation circuit are transmitted each in a corresponding one of the plurality of carrier frequency bands (¶0026).

Re claim 2, Bjerke discloses a wireless communication apparatus wherein the modulation circuit comprises:

a modulator (modulator 116 in fig. 1) that generates a baseband signal by modulating the data by a predetermined modulation method (¶0030); and

a plurality of frequency converters (transmitters 122a-122t in fig. 1) that convert the baseband signal generated by the modulator respectively into the data signals in the corresponding carrier frequency bands (¶0031, it is inherent that baseband signals would be converted to carrier frequency bands in an OFDM system).

Re claim 3, Bjerke discloses a wireless communication wherein the predetermined modulation method used by the modulator is an OFDM method (¶0030).

2. Claims 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto (US6151372).

Re claim 4, Yamamoto discloses a wireless communication apparatus, comprising:

a plurality of antennas (antennas 10a and 10b in fig. 1) via which are received data signals each transmitted in one of a plurality of carrier frequency bands (col. 5 lines 45-47);

a plurality of frequency conversion circuits (orthogonal detectors 20a and 20b in fig. 1) that convert the data signals received respectively via the plurality of antennas into a plurality of baseband signals having an identical frequency (col. 2 lines 19-24); and

a demodulation circuit (diversity processing unit 60, parallel – serial conversion circuit 70, and demodulator 90 in fig. 1) that, based on the plurality of baseband signals obtained respectively from the plurality of frequency conversion circuits (the baseband signals output from orthogonal detectors 20a and 20b in fig. 1), checks reception condition in the carrier frequency bands corresponding respectively to the plurality of data signals (col. 5 lines 10-29) and selects the baseband signal obtained from the data signal in the carrier frequency band in which reception condition is found best (wave selector 66 in fig. 3, col. 5 lines 30-37) and that then demodulates the thus selected baseband signal (output of demodulator 90 in fig. 1, col. 2 lines 54-57),

wherein the data signals transmitted respectively in the plurality of carrier frequency bands contain identical data (It is inherent that the data received at antennas 10a and 10b in fig. 1 be identical since they come from the same antenna 7. Furthermore, it is well known in the art that OFDM is a multi-carrier transmission method).

Re claim 6, Yamamoto discloses a wireless communication apparatus comprising:

a plurality of antennas (antennas 10a and 10b in fig. 1) via which are received data signals each transmitted in one of a plurality of carrier frequency bands (col. 5 lines 45-47, it is inherent that the OFDM modulated signal be transmitted in one carrier frequency band);

a plurality of frequency conversion circuits (orthogonal detectors 20a and 20b in fig. 1) that convert the data signals received respectively via the plurality of antennas into a plurality of baseband signals having an identical frequency (col. 2 lines 19-24); and

a demodulation circuit (diversity processing unit 60, parallel – serial conversion circuit 70, and demodulator 90 in fig. 1) that synthesizes together the plurality of baseband signals obtained respectively from the plurality of frequency conversion circuits into a single baseband signal (wave combiner 64 in fig. 2, col. 3 lines 28-31) and that then demodulates the thus synthesized baseband signal (output of demodulator 90 in fig. 1, col. 2 lines 54-57);

wherein the data signals transmitted respectively in the plurality of carrier frequency bands contain identical data (it is inherent that the data received at antennas 10a and 10b in fig. 1 be identical since they come from the same antenna 7. Furthermore, it is well known in the art that OFDM is a multi-carrier transmission method).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US6151372) in view of Yamamoto et al (US6700865).

Re claim 5, Yamamoto fails to teach a wireless communication apparatus wherein, when a data signal is being transmitted only in one carrier frequency band, the modulation circuit demodulates a corresponding baseband signal without selecting from a plurality of baseband signals. However Yamamoto et al. teaches a diversity receiver (fig. 3) which turns on an ON/OFF switch (switches 301-1 to 301-N in fig. 3) of the antennas (antennas 101-1 to 101-N in fig. 3) whose reception levels exceeds a predetermined threshold (col. 4 lines 4-9). Although not explicitly stated, one of ordinary skill in the art would have found it obvious that if only one carrier frequency band is received, only one switch would be in an ON state. Furthermore, there would not be any selection between a plurality of baseband signals since only one signal would pass to the demodulation circuit (OFDM demodulation circuit 601 in fig. 3).

Therefore taking the combined teachings of Yamamoto and Yamamoto et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the demodulation of Yamamoto et al. into the diversity receiver of Yamamoto. The motivation to combine Yamamoto and Yamamoto et al. would be to improve the anti-multi-path fading characteristic (col. 4 lines 10-12).

Re claim 7, Yamamoto fails to teach a wireless communication apparatus wherein, when a data signal is being transmitted only in one carrier frequency band, the modulation circuit demodulates a corresponding baseband signal without synthesizing

together from a plurality of baseband signals. However Yamamoto et al. teaches a diversity receiver (fig. 3) which turns on an ON/OFF switch (switches 301-1 to 301-N in fig. 3) of the antennas (antennas 101-1 to 101-N in fig. 3) whose reception levels exceeds a predetermined threshold (col. 4 lines 4-9). Although not explicitly stated, one of ordinary skill in the art would have found it obvious that if only one carrier frequency band is received, only one switch would be in an ON state. Furthermore, there would not be any synthesizing of a plurality of baseband signals since only one signal would pass to the demodulation circuit (OFDM demodulation circuit 601 in fig. 3).

Therefore taking the combined teachings of Yamamoto and Yamamoto et al. as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the demodulation of Yamamoto et al. into the diversity receiver of Yamamoto. The motivation to combine Yamamoto and Yamamoto et al. would be to improve the anti-multi-path fading characteristic (col. 4 lines 10-12).

5. Claims 8, 11, 14, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US6151372) in view of Multi-Carrier Multi-Antenna Group (http://bwrc.eecs.berkeley.edu/Research/MCMA/home.htm), hereby referred to as MCMA.

Re claim 8, Yamamoto discloses a wireless communication apparatus comprising:

n antennas(antennas 10a and 10b in fig. 1) via which are received data signals modulated by an OFDM modulation method (col. 2 lines 18-20);

n frequency conversion circuits (orthogonal detectors 20a and 20b in fig. 1) that convert the data signals received respectively via the n antennas into baseband signals having an identical frequency (col. 2 lines 19-24);

n Fourier transform circuits (serial-parallel conversion circuits 40a and 40b in fig. 1, Fourier transform circuits 50a and 50b in fig. 1) that, based on the plurality of baseband signals obtained respectively from the n frequency conversion circuits, generate parallel data (col. 2 lines 42-47) containing data segments each relating to one of m (where m is an integer equal to or greater than 2) subcarriers (col. 2 lines 42-49);

n data correction circuits (propagation path characteristic estimating sections 61a and 61b in fig. 3) that, based on the parallel data fed respectively from the n Fourier transform circuits, check reception condition of each of the m subcarriers in the respective carrier frequency bands (col. 5 lines 10-23) and accordingly correct the parallel data;

a data selection circuit that receives the n sets of parallel data corrected by the n data correction circuits (wave selector 66 in fig. 3) and that then, for each of the m subcarriers, recognizes the carrier frequency band in which reception condition is best and that then selects the data in the thus recognized carrier frequency band (col. 5 lines 30-37) so as to thereby newly generate parallel data containing m data segments; and

a demodulation circuit that converts the parallel data newly generated by the data selection circuit into serial data (demodulator 90 in fig. 1), wherein the parallel data contained in the data signals transmitted respectively in the plurality of carrier frequency bands contains identical data (it is inherent that the data received at antennas 10a and

10b in fig. 1 be identical since they come from the same antenna 7. Furthermore, it is well known in the art that OFDM is a multi-carrier transmission method).

However Yamamoto fails to teach wherein the received data signals are transmitted in n carrier frequency bands. MCMA teaches an OFDM system which uses multiple antenna processing for each sub-carrier, interpreted to be corresponding to a particular frequency band (third paragraph). One of ordinary skill in the art would have found it obvious to use one antenna for each carrier frequency.

Therefore taking the combined teachings of Yamamoto and MCMA as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the multiple antenna scheme of MCMA into the diversity receiver of Yamamoto. The motivation to combine Yamamoto and MCMA would be to improve capacity (third paragraph).

Re claim 11, Yamamoto teaches a wireless communication apparatus comprising:

n antennas (antennas 10a and 10b in fig. 1) via which are received data signals modulated by an OFDM modulation method (col. 2 lines 18-20);

n frequency conversion circuits (orthogonal detectors 20a and 20b in fig. 1) that convert the data signals received respectively via the n antennas into baseband signals having an identical frequency (col. 2 lines 19-24);

n Fourier transform circuits (serial-parallel conversion circuits 40a and 40b in fig. 1, Fourier transform circuits 50a and 50b in fig. 1) that, based on the plurality of baseband signals obtained respectively from the n frequency conversion circuits, generate parallel data (col. 2 lines 42-47) containing data segments each relating to one of m (where m is an integer equal to or greater than 2) subcarriers (col. 2 lines 42-49);

n data correction circuits (propagation path characteristic estimating sections 61a and 61b in fig. 3) that, based on the parallel data fed respectively from the n Fourier transform circuits, check reception condition of each of the m subcarriers in the respective carrier frequency bands (col. 5 lines 10-23) and accordingly correct the parallel data;

a data synthesis circuit (wave combiner 64 in fig. 2) that receives the n sets of parallel data corrected by the n data correction circuits and that then, for each of the m subcarriers, synthesizes the data so as to thereby newly generate parallel data containing m data segments (fig. 2, col. 4 lines 39-42); and

a demodulation circuit (parallel-serial conversion circuit 70 and demodulator 90 in fig. 1) that converts the parallel data newly generated by the data synthesis circuit into serial data,

wherein the parallel data contained in the data signals transmitted respectively in the plurality of carrier frequency bands contains identical data (it is inherent that the data received at antennas 10a and 10b in fig. 1 be identical since they come from the same antenna 7. Furthermore, it is well known in the art that OFDM is a multi-carrier transmission method).

However Yamamoto fails to teach wherein the received data signals are transmitted in n carrier frequency bands. MCMA teaches an OFDM system which uses multiple antenna processing for each sub-carrier, interpreted to be corresponding to a particular frequency band (third paragraph). One of ordinary skill in the art would have found it obvious to use one antenna for each carrier frequency.

Therefore taking the combined teachings of Yamamoto and MCMA as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the multiple antenna scheme of MCMA into the diversity receiver of Yamamoto. The motivation to combine Yamamoto and MCMA would be to improve capacity (third paragraph).

Re claim 14, the claimed limitations recited have been analyzed and rejected with respect to claim 8. One of ordinary skill in the art would have found it obvious to rearrange the data selection circuit and data correction circuit in claim 8 for achieving the same outcome as the wireless communication apparatus as claimed in claim 8. See MPEP § 2144.04 Section VI(c).

Re claim 17, the claimed limitations recited have been analyzed and rejected with respect to claim 8. Furthermore, Yamamoto teaches a predetermined modulation

method, used by the modulator, that is an OFDM method (orthogonal modulator 6 in fig. 1 of Yamamoto, col. 2 lines 12-17 in Yamamoto).

Re claim 18, the claimed limitations recited have been analyzed and rejected with respect to claim 11. Furthermore, Yamamoto teaches a predetermined modulation method, used by the modulator, that is an OFDM method (orthogonal modulator 6 in fig. 1 of Yamamoto, col. 2 lines 12-17 in Yamamoto).

Re claim 19, the claimed limitations recited have been analyzed and rejected with respect to claim 14. Furthermore, Yamamoto teaches a predetermined modulation method, used by the modulator, that is an OFDM method (orthogonal modulator 6 in fig. 1 of Yamamoto, col. 2 lines 12-17 in Yamamoto).

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US6151372) in view of Bjerke et al (US20050157811).

Re claim 15, Yamamoto teaches a data reception apparatus built with a wireless communication apparatus that comprises:

a plurality of antennas (antennas 10a and 10b in fig. 1) which receive data signals each transmitted in one of a plurality of carrier frequency bands (col. 5 lines 45-

47, it is inherent that the OFDM modulated signal be transmitted in one carrier frequency band);

a plurality of frequency conversion circuits (orthogonal detectors 20a and 20b in fig. 1) that convert the data signals received respectively via the plurality of antennas into a plurality of baseband signals having an identical frequency (col. 2 lines 19-24); and

a demodulation circuit (diversity processing unit 60, parallel – serial conversion circuit 70, and demodulator 90 in fig. 1) that, based on the plurality of baseband signals obtained respectively from the plurality of frequency conversion circuits (the baseband signals output from orthogonal detectors 20a and 20b in fig. 1), checks reception condition in the carrier frequency bands corresponding respectively to the plurality of data signals (col. 5 lines 10-29) and selects the baseband signal obtained from the data signal in the carrier frequency band in which reception condition is found best (wave selector 66 in fig. 3, col. 5 lines 30-37) and that then demodulates the thus selected baseband signal (output of demodulator 90 in fig. 1, col. 2 lines 54-57),

wherein the data signals transmitted respectively in the plurality of carrier frequency bands contain identical data (It is inherent that the data received at antennas 10a and 10b in fig. 1 be identical since they come from the same antenna 7. Furthermore, it is well known in the art that OFDM is a multi-carrier transmission method).

However Yamato fails to teach:

a modulation that generates a plurality of data signals containing identical data each in one of a plurality of carrier frequency bands; and

a plurality of antennas via which the plurality of data signals outputted from the modulation circuit are transmitted each in a corresponding one of the plurality of carrier frequency bands.

Bjerke does teach:

a modulation circuit (modulator 116 in fig. 1) that generates a plurality of data signals (the outputs of modulator 116 going to transmitters 122a-122t in fig. 1) containing identical data (the data from TX Data processor 114 in fig. 1) each in one of a plurality of carrier frequency bands (¶0026, each transmission channel corresponding to a frequency subchannel of a spatial subchannel); and

a plurality of antennas (antennas 124a-124t in fig. 1) via which the plurality of data signals outputted from the modulation circuit are transmitted each in a corresponding one of the plurality of carrier frequency bands (¶0026).

Therefore taking the combined teachings of Yamato and Bjerke as a whole, it would have been obvious to one of ordinary skill in the art to combine the modulation circuit and antennas of Bjerke into the apparatus of Yamato. The motivation to combine Bjerke and Yamato would be to combat intersymbol interference (¶0009).

Re claim 16, Yamamoto teaches a data reception apparatus built with a wireless

communication apparatus that comprises:

a plurality of antennas (antennas 10a and 10b in fig. 1) via which are received data signals each transmitted in one of a plurality of carrier frequency bands (col. 5 lines 45-47, it is inherent that the OFDM modulated signal be transmitted in one carrier frequency band);

a plurality of frequency conversion circuits (orthogonal detectors 20a and 20b in fig. 1) that convert the data signals received respectively via the plurality of antennas into a plurality of baseband signals having an identical frequency (col. 2 lines 19-24); and

a demodulation circuit (diversity processing unit 60, parallel – serial conversion circuit 70, and demodulator 90 in fig. 1) that synthesizes together the plurality of baseband signals obtained respectively from the plurality of frequency conversion circuits into a single baseband signal (wave combiner 64 in fig. 2, col. 3 lines 28-31) and that then demodulates the thus synthesized baseband signal (output of demodulator 90 in fig. 1, col. 2 lines 54-57);

wherein the data signals transmitted respectively in the plurality of carrier frequency bands contain identical data (it is inherent that the data received at antennas 10a and 10b in fig. 1 be identical since they come from the same antenna 7. Furthermore, it is well known in the art that OFDM is a multi-carrier transmission method).

However Yamato fails to teach:

a modulation that generates a plurality of data signals containing identical data each in one of a plurality of carrier frequency bands; and

a plurality of antennas via which the plurality of data signals outputted from the modulation circuit are transmitted each in a corresponding one of the plurality of carrier frequency bands.

Bjerke does teach:

a modulation circuit (modulator 116 in fig. 1) that generates a plurality of data signals (the outputs of modulator 116 going to transmitters 122a-122t in fig. 1) containing identical data (the data from TX Data processor 114 in fig. 1) each in one of a plurality of carrier frequency bands (¶0026, each transmission channel corresponding to a frequency subchannel of a spatial subchannel); and

a plurality of antennas (antennas 124a-124t in fig. 1) via which the plurality of data signals outputted from the modulation circuit are transmitted each in a corresponding one of the plurality of carrier frequency bands (¶0026).

Therefore taking the combined teachings of Yamato and Bjerke as a whole, it would have been obvious to one of ordinary skill in the art to combine the modulation circuit and antennas of Bjerke into the apparatus of Yamato. The motivation to combine Bjerke and Yamato would be to combat intersymbol interference (¶0009).

Allowable Subject Matter

7. Claims 9, 10, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon-Viet Q. Nguyen whose telephone number is 571-270-1185. The examiner can normally be reached on monday-friday, alternate friday off, 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon-Viet Nguyen/
Assistant Examiner Art Unit 2611

David C. Payne
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SUPERVISORY PATENT EXAMINER